

**AMENDMENTS TO THE CLAIMS**

1-42 (Canceled)

43. (Previously presented) A computer implemented method comprising:

- identifying portions of a model as being critical to a real-time execution of the model;
- identifying other portions of the model as being non-critical to the real-time execution of the model;
- generating code for real-time execution based on the critical portions of the model; and
- transmitting the generated code for execution on a target.

44. (Previously presented) The method of claim 43 wherein non-critical portions are post-processing units.

45. (Previously presented) The method of claim 44 wherein the post-processing units are logical units of the model that have no synchronized data outputs feeding non-post-processing sections of the model.

46. (Previously presented) The method of claim 43 wherein the generating further comprises:  
establishing an inter-process communication link between the generated code and the non-critical portions of the model.

47. (Previously presented) The method of claim 46 further comprising:  
receiving output from the generated code via the inter-process communications link.

48. (Previously presented) The method of claim 47 further comprising executing the code on a target processor associated with the target.

49. (Previously presented) The method of claim 47 further comprising:  
processing the output in the non-critical portions of the model.

50. (Previously presented) A computer-readable storage medium holding computer-executable instructions, the instructions comprising instructions for:

- identifying portions of a model as being critical to a real-time execution of the model;
- identifying other portions of the model as being non-critical to the real-time execution of the model;
- generating code that is capable of real-time execution based on the critical portions of the model; and
- transmitting the generated code for execution on a target.

51. (Previously presented) A processor and memory configured to:

- identify portions of a model as being critical to a real-time execution of the model, and other portions of the model as being non-critical to a real-time execution of the model; and
- generate code that is capable of real-time execution based on the critical portions of the model; and
- transmit the generated code for execution on a target.

52. (New) A method of generating computer program instructions with a computer, comprising:  
analyzing components in a simulatable block diagram model with the computer, the analyzing:

- identifying components critical to control of a hardware device, and
- identifying components that are not critical to control of the hardware device;
- marking components identified as critical to control of the hardware device as critical components, the marking performed using the computer;
- marking the components identified as not critical to control of the hardware device as non-critical components, the marking performed using the computer; and
- generating the computer program instructions for the simulatable block diagram model with an automatic code generator, the computer program instructions implementing behavior of the block diagram model, said generating comprising:
  - generating computer program instructions for the components of the block diagram model that are marked as critical, and

ignoring the components of the block diagram model marked non-critical so that no computer program instructions are generated for the components of the block diagram model marked as non-critical.